Metacam® (meloxicam) 5 mg/mL Solution for Injection

Non-steroidal anti-inflammatory drug for use in dogs and cats only

Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

Warning: Repeated use of meloxicam in cats has been associated with acute renal failure and death. Do not administer additional injectable or oral meloxicam to cats. See Contraindications, Warnings, and Precautions for detailed information.

Description: Meloxicam is a non-steroidal anti-inflammatory drug (NSAID) of the oxazoline class. Each mL of this sterile product for injection contains meloxicam 5.0 mg, alcohol 15%, glycerol 10%, polysorbat 188 5%, sodium chloride 0.6%, glycine 0.5% and meglumine 0.3%, in water for injection, pH adjusted with sodium hydroxide and hydrochloric acid.

Indications: Dogs: Metacam (meloxicam) 5 mg/mL Solution for Injection is indicated in dogs for the control of pain and inflammation associated with osteoarthritis.

Dosage and Administration: Carefully consider the potential benefits and risk of Metacam and other treatment options before deciding to use Metacam. Use the lowest effective dose for the shortest duration consistent with individual response.

Dogs: Metacam 5 mg/mL Solution for Injection should be administered initially as a single dose at 0.09 mg/lb (0.2 mg/kg) and periodically during use of any NSAID in dogs. However, there is some evidence of enhanced drug accumulation and terminal elimination half-life (†30%) in dogs regardless of route of administration. Concurrent administration of potentially nephrotoxic drugs should be carefully approached. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such anti-prostaglandin effects may result in clinically significant disease in patients with underlying or preexisting disease that has not been previously diagnosed. Since NSAIDs possess the potential to induce gastrointestinal ulcerations and/or perforations, concomitant use with other anti-inflammatory drugs, such as NSAIDs or corticosteroids, should be avoided. If additional pain medication is needed after the administration of the total daily dose of Metacam Oral Suspension, a non-NSAID or noncorticosteroid class of analgesia should be considered. The lack of another NSAID is not recommended. Consider appropriate washout times when switching from corticosteroid use or from one NSAID to another in dogs. The use of concomitantly protein-bound drugs with Metacam 5 mg/mL Solution for Injection has not been studied in dogs. Commonly used protein-bound drugs include cardiac, anticonvulsant and behavioral medications. The influence of concomitant drugs that may inhibit metabolism of Metacam 5 mg/mL Solution for Injection has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy. The effect of cyclo-oxygenase inhibition and the potential for thromboembolic occurrence or a hypersusceptible state has not been studied.

Adverse Reactions: Dogs: A field study involving 224 dogs was conducted. Based on the results of this study, GI abnormalities (vomiting, soft stools, diarrhea, and inappetence) were the most common adverse reactions associated with the administration of meloxicam. The following table lists adverse reactions and the numbers of dogs that experienced them during the study. Dogs may have experienced more than one episode of the adverse reaction during the study.

<table>
<thead>
<tr>
<th>Clinical Observation</th>
<th>Metacam (n=109)</th>
<th>Placebo (n=115)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vomiting</td>
<td>31</td>
<td>15</td>
</tr>
<tr>
<td>Diarrhea/Soft Stool</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Inappetence</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Bloody Stool</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

In foreign suspected adverse drug reaction (SADR) reporting, adverse reactions related to meloxicam administration Included: auto-immune hemolytic anemia (1 dog), thrombocytopenia (1 dog), polymyalgia (1 dog), nursing puppy lethargy (1 dog), and pyoderma (1 dog).

Post-Approval Experience (Rev. 2009): The following adverse reactions are based on post-approval adverse drug event reporting. The categories are listed in decreasing order of frequency by body system: Gastrointestinal: vomiting, diarrhea, melena, gastrointestinal ulceration Urinary: azotemia, elevated creatinine, renal failure Neurological/Behavioral: lethargy, depression Hepatic: elevated liver enzymes Dermatologic: pruritus Death has been reported as an outcome of the adverse events listed above. Acute renal failure and death have been associated with the use of meloxicam in cats.

To report suspected adverse drug events, for technical assistance or to obtain a copy of the MSDS, contact Boehringer Ingelheim Vetmedica, Inc. at 1-866-METACAM (1-866-638-2226). For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-IVETS or online at http://fda.gov/animal/animal-drugs.

Information For Dog Owners: Meloxicam, like other NSAIDs, is not free from adverse reactions. Owners should be advised of the potential for adverse reactions and be informed of the clinical signs associated with NSAID intolerance. Adverse reactions may include vomiting, diarrhea, lethargy, decreased appetite and behavioral changes. Dog owners should be advised when their pet has received a meloxicam injection. Dog owners should contact their veterinarian immediately if possible adverse reaction is observed, and dog owners should be advised to discontinue Metacam therapy.

Clinical Pharmacology: Meloxicam has nearly 100% bioavailability when administered orally or after subcutaneous injection in dogs. The terminal elimination half life after a single dose is estimated to be approximately 24 hrs (†30%) in dogs regardless of route of administration. Drug bioavailability, volume of distribution, and total systemic clearance remain constant up to 5 times the recommended dose for use in dogs. However, there is some evidence of enhanced drug accural elimination half-life prolongation when dogs are dosed for 45 days or longer. Peak plasma concentrations of 0.734 mcg/mL can be expected to occur within 2.5 hours following a 0.2 mg/kg subcutaneous injection in dogs. Based upon intravenous administration in Beagle dogs, the meloxicam volume of distribution (Vd) is approximately 0.32 L/kg and the total systemic clearance is 0.01 L/hr/kg. The drug is 97% bound to canine plasma proteins.

Effectiveness: Dogs: The effectiveness of Metacam 5 mg/mL Solution for Injection was demonstrated in a field study involving a total of 224 dogs representing various breeds, all diagnosed with osteoarthritis. This placebo-controlled, masked study was conducted for 14 days. Dogs received a subcutaneous injection of 0.2 mg/kg Metacam 5 mg/mL Solution for Injection on day 1. The dogs were maintained on 0.1 mg/kg oral meloxicam from days 2 through 14. Variables evaluated by veterinarians included lameness, weight-bearing, pain on palpation, and overall improvement. Variables assessed by owners included mobility, ability to rise, limping, and overall improvement. In this field study, dogs showed clinical improvement with statistical significance after 14 days of meloxicam treatment for all variables.

Animal Safety: Dogs: 3 Day Target Animal Safety Study - in a three day study of 6 dogs per group. Metacam Solution for Injection was administered intravenously to Beagle dogs at 1, 3, and 5 times the recommended dose (0.2, 0.6 and 1.0 mg/kg) for three consecutive days. Vomiting occurred in 1 of 6 dogs in the 5X group. The dogs were maintained on 0.1 mg/kg oral meloxicam for 3 days. No adverse reactions were observed in the dogs. Serum alkaline phosphatase (ALP) was significantly increased in one 1X dog and two of the 5X dogs. One dog in the 5X group had a steadily increasing GGT over 4 days, although the values remained within the reference range. Decreases in total protein and albumin occurred in 2 of 6 dogs in the 3X group and 3 of 6 dogs in the 5X group. Increases in blood urea nitrogen (BUN) occurred in 3 of 6 dogs in the 1X group, 2 of 6 dogs in the 3X group and 2 of 6 dogs in the 5X group. Increased creatinine occurred in 2 dogs in the 5X group. Increased urine protein excretion was noted in 2 of 6 dogs in the control group, 2 of 6 dogs in the 1X group, 2 of 6 dogs in the 3X group, and 5 of 6 dogs in the 5X group. Two dogs in the 5X group developed acute renal failure by Day 4. Bilirubin levels were at or above normal levels in 1 of 6 dogs in the 5X group. Histological examination revealed gastrointestinal lesions ranging from superficial mucosal hemorrhages and congestion to erosions. Mesenteric lymphadenopathy was identified in 2 of 6 dogs in the 1X group, 4 of 6 dogs in the 3X group, and 5 of 6 dogs in the 5X group. The dogs were maintained on diltiaemed medullary and cortical tubules and inflammation of the interstitium, to necrosis of the tip of the papilla in 2 of 6 dogs in the 1X group, 2 of 6 dogs in the 3X group, and 4 of 6 dogs in the 5X group.

Injection Site Tolerance - Metacam 5 mg/mL Solution for Injection was administered once subcutaneously to Beagle dogs at the recommended dose of 0.2 mg/kg and was well-tolerated by the dogs. Pain upon injection was observed in one of eight dogs treated with meloxicam. No pain or inflammation was observed post-injection. Long term use of Metacam 5 mg/mL Solution for Injection in dogs has not been evaluated.

Effect on Buccal Mucosal Bleeding Time (BMBT) - Metacam 5 mg/mL Solution for Injection (0.2 mg/kg) and placebo (0.4 mg/kg) were administered as single intravenous injections to 8 female and 8 male Beagle dogs. There was no statistically significant difference (p>0.05) in the average BMBT between the two groups.

Storage Information: Store at controlled room temperature, 68-77°F (20-25°C). Use contents within 6 months of first puncture.

How Supplied: Metacam 5 mg/mL Solution for Injection: 10 mL vial NDC 0019-6013-01 - 10 mL

Manufactured For: Boehringer Ingelheim Vetmedica, Inc. St. Joseph, MO 64506 U.S.A.

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